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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,996

07/05/2006

Itshak Ben Yesha

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EXAMINER

BEHRINGER, LUTHER G

ART UNIT

PAPER NUMBER

4148

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,996	Applicant(s) YESHA, ITSHAK BEN	
	Examiner LUTHER G. BEHRINGER	Art Unit 4148	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/10/2007 02/13/2007 07/05/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim(s) 7, 12 and 13 are objected to because of the following informalities:
Claim 7 appears to be utilizing an incorrect verb in the following phrase: "wherein the filtering is *performed* by a high pass filter." (Emphasis added) **Claim(s) 12 and 13** do not have periods. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim(s) 1, 3 – 5, 9, 10, 11, 13 – 15, 18, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by **Miller (US 5,796,340)**.

Regarding **claim(s) 1 and 11**, Miller discloses a system and method for non-invasive monitoring of subject heartbeat rate, said system and method comprised of: collecting pressure changes received from at least two sensors located beneath the subject's body; finding the difference between at least two sensor signal measurements; analyzing the difference signal for identifying and detecting heartbeats or heart rate (Column 3, Lines 23 – 29).

Regarding **claim(s) 3 and 13**, Miller discloses the step of identifying the respiration rate (Column 3, 23 – 29).

Regarding **claim(s) 4 and 14**, Miller discloses the step of calculating the sum of at least two signal measurements and filtering and analyzing the calculated sum signal in combination with the difference signal for identifying and detecting the heartbeat rate and respiration rate (Column 5, Lines 26 – 30).

Regarding **claim(s) 5 and 15**, Miller discloses the step of calculating the maximum difference signal between sets of sensors, wherein the identification and detection of the heartbeat rate is based on said maximum signal difference (Column 5, Lines 26 – 30).

Regarding **claim(s) 9 and 18**, Miller discloses at least one sensor is located beneath the lower part of the subject's body and at least one sensor is located beneath the upper part of the subject's body (Column 3, Lines 23 – 29).

Regarding **claim(s) 10 and 20**, Miller discloses the difference signal represents the horizontal movements of the subject and the filtering and analyzing includes detection of the blood circulation (Column 3, Lines 23 – 29).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim(s) 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Sackner et al. (US 2002/0032386)**.

Regarding **claim(s) 2 and 12**, Miller fails to disclose comprising the step of filtering the calculated difference signal for reducing background noise and respiratory artifact and other body movements in accordance with predefined signal frequency band values.

However, Sackner et al. teaches comprising the step of filtering the calculated difference signal for reducing background noise and respiratory artifact and other body movements in accordance with predefined signal frequency band values (Page 12, Paragraph [0114]).

7. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller with the step of reducing background noise and respiratory artifact as taught by Sackner et al. since it is well known in the art that doing so would increase the ease and reliability of the interpretation of the data delivered by Millers invention.

8. Claim(s) 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Cornish et al. (US 2006/0247543)**.

Regarding **claim(s) 6 and 16**, Miller fails to disclose the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm.

However, Cornish et al. teaches comprising the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm (Page 5, Paragraphs [0092] and [0093]).

9. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller with the teachings of Cornish et al. since it is well known in the art that doing so increases the reliability of the invention as disclosed by Miller.

10. Claim(s) 7, 8, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Porges (US 4,510,944)**.

Regarding **claim(s) 7 and 17**, Miller fails to disclose wherein the filtering is preformed by a high pass filter, wherein the cut off frequency is twice a pre-defined heart rate.

However, Porges teaches wherein the filtering is preformed by a high pass filter (Column 1, Lines 57 – 61), wherein the cut off frequency is twice a pre-defined heart rate (Column 13, Lines 5 – 15).

11. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller with the teachings of Porges since it is

well known in the art that doing so increases the reliability of the invention as disclosed by Miller.

Regarding **claim(s) 8 and 19**, Miller fails to disclose wherein the analyzing includes identifying peak values of the filtered signal.

However, Porges teaches wherein the analyzing includes identifying peak values of the filtered signal (Column 8, Lines 37 – 41).

12. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller with the teachings of Porges since it is well known in the art that doing so would aid in the reliability of a diagnosis of a patient utilizing the invention as disclosed by Miller.

13. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Bridger et al. (US 6,491,647)**.

Regarding **claim 21**, Miller fails to disclose wherein the sensors are integrated within a single rigid housing.

However, Bridger et al. teaches wherein the sensors are integrated within a single rigid housing (Column 15, Lines 39 – 43).

14. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use the sensors integrated within a single rigid housing as taught by Bridger et al. to modify the invention as disclosed by Miller. Using the known technique of a rigid housing multi sensor package to provide uniform packaging and prevent device modification of the invention as disclosed by Miller would have been obvious to one of ordinary skill.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Cummins (US 4,066,072), Lawson, Jr. (US 4,146,885), Friesen et al. (US 4,438,771), Fraden (US 4,509,527), Orlando (US 4,738,264), Gordon et al. (US 4,862,361), Bellin et al. (US 5,448,996), Poliac (US 5,720,292), Van der Loos et al. (US 6,468,234), Woodward (US 6,485,441), Ketelhohn (US 6,765,489), Goldstein (US 2004/0176668), Semler et al. (US 2005/0101875), Rantala (US 7,029,447), Derchak et al. (US 2006/0258914).**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUTHER G. BEHRINGER whose telephone number is (571)270-3868. The examiner can normally be reached on Mon - Thurs 8:00 - 5:30; 2nd Friday 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrell McKinnon can be reached on (571) 272-4797. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4148

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Luther Behringer
December 26, 2007

***/Terrell L Mckinnon/
Supervisory Patent Examiner, Art Unit 4148***